

Technician Training — An Approach

MELVIN FINN

The problem of increasing the technical competence and raising the educational level of the sub-professional or technical employees in research and development activities is a gnawing one. If your installation is in the same position as the U. S. Army Engineer Research and Development Laboratories, Fort Belvoir, Virginia, the problem has been compounded by the fact that there is a shortage of technicians, limited training facilities in the area that offer an accredited curriculum, and the need for a high degree of specialization within the scientific or engineering discipline. Since we are in the field of applied research and engineering (for the most part), the sub-professional employee is used mainly for his practical knowledge of the type and usage of the equipment under study. As a result, a premium is placed upon those technicians who have operating or maintenance experience in the handling of the types of materiel under development at the Laboratories. These highly skilled personnel often lack the formal educational background that would enable them to be more useful to the engineer and scientist. The educational backgrounds,

as you can imagine, vary to the point of frustration. Some are graduates of high school, few of vocational school with a smattering of technical school graduates. Many have varied stages of completion of high school.

How to come up with a training program for personnel with such varied backgrounds was a thorny one. The training philosophy of the Laboratories is based on the advantages of a long-range program which will not only serve the needs of the Laboratories but will also be useful to the employees involved.

We also believe that since the employee is benefiting, he should also make some contribution. With this in mind, the University of Virginia was contacted through its Extension Center of Northern Virginia. The problem was presented to them as it fell within the purview of adult education although in a specialized field. Because of the divergence of backgrounds, it was necessary to develop a program with wide appeal and tailored to the extent possible that would serve the individual's needs. This we felt was mandatory since not only was the educational back-

MELVIN FINN is the Chief, Training and Development Division, Civilian Personnel Office, U. S. Army Engineer Center and Fort Belvoir, Virginia. He has also served in civilian training positions with the U. S. Navy. Mr. Finn holds a B.S. in Education from Boston University and is currently a candidate for a M.A. in Public Administration from American University.

ground very limited of many of those whom we hoped to attract into the program, but most of the employees had been out of school for many years and had little confidence in their ability to return to school now. Most of them probably would have to go to their children for help. This is a role that no parent would enjoy playing.

A program was formulated as to what would be beneficial to the sub-professional employees and make them more effective. The proposal was reviewed by the Training Committee and various line personnel throughout the organization to determine applicability and need. After it was approved, it was

forwarded to the University of Virginia, Division of Extension and General Studies, The Northern Virginia Center, for their comments. The University of Virginia, in turn, based on our original planning submitted a program which ultimately was approved. The program is outlined below.

The program was announced throughout the activity, both at The Army Engineer Center and The Army Engineer Research and Development Laboratories by articles in the local paper, staff meetings and presentations by the Training and Development Division to selected appropriate personnel upon request by the line officials. The policy was that

PROGRAM
for
CERTIFICATE IN TECHNOLOGY

MATHEMATICS	9 units and/or sem hrs
Select from the following:	
Basic Algebra (3); Solid Geometry (3);	
Trigonometry (3); Pre-Engineering Math	
Review (3); College Algebra & Trig (3);	
Calculus & Analytic Geometry (3)	
ENGLISH	6 units and/or sem hrs
Select from the following:	
Elements of English Grammar & Comp (3);	
English Comp I (3); English Comp II (3)	
ELECTRICITY or ELECTRONICS	6 units
Select from the following:	
Principles of Electricity I & II (6)	
or Fundamentals of Electronics I & II (6)	
SOCIAL SCIENCE	3 sem hrs
Select from the following:	
American History (3); Psychology (3);	
Sociology (3); or Economics (3)	
PHYSICS or CHEMISTRY	6 sem hrs
Select from the following:	
Physics I & II (6); or	
Chemistry I & II (6)	
ELECTIVES	6 units and/or sem hrs
Engineering Drawing I & II (4 sem hrs	
is recommended)	
TOTAL FOR CERTIFICATE	36 units and/or sem hrs

the tuition would be paid for Laboratory personnel by the Government provided that each course taken was applicable and necessary to the work of the employee, after having been approved by the operating personnel. However, the employee would attend on his own time and pay for his own books.

Enrollment Enthusiasm

The response was beyond all expectations. There are a total of 64 people enrolled in the program. Twenty-five employees are taking two courses and the rest are taking one, either Basic Algebra or English Grammar and Composition. Figure 1 is a breakdown by courses of the number of employees enrolled. Also Figure 1 is a breakdown of the total enrollment by occupation. The skilled craftsmen are those who are generally in the field of model making or developmental fabrication from which the better employees will be selected as future technicians. Those marked as sub-professional or technical fall in the general work area of Engineering Aid, Equipment Specialist, Physical Science Aid, etc. The pay range for this group varies from (GS-5) \$4060 per annum to \$8330. The remainder of the attendees are not civil service employees and no information was available on them.

The first two courses, Basic Algebra and English Grammar and Composition, are not college credit courses. This was done to insure and permit those with limited educational backgrounds to enroll and get started. It will start slowly and gradually build up the educational development of the attendees to a point where college courses can be handled. The program itself makes no distinction for completion and either type of course

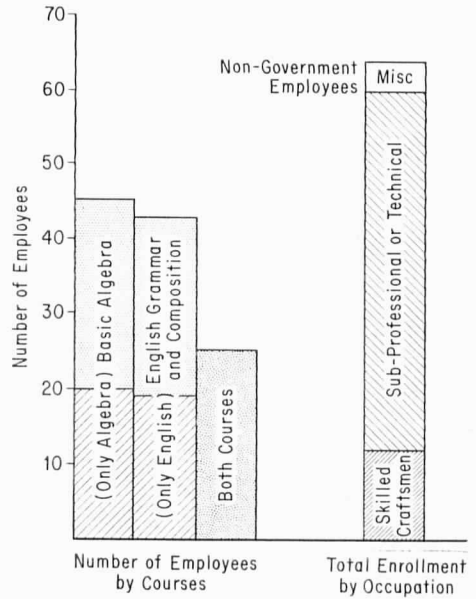


Figure 1

may be credited for the Certificate in Technology. Each individual may take two courses each semester for three years which will enable him to receive a certificate at the end of three years of study. The areas of study and minimum requirements are noted in Figure 1. If, however, an individual completes some of the college credit courses (marked semester hours in the Program Outline), these will be credited towards any future college work he may like to work for, such as an Associate Degree in Engineering. By this device, the employee (and the University of Virginia) may ascertain whether or not the employee is capable of doing college work and lay the ground work for a longer range development program. Because of the large response, both the present classes have been broken down into two sections, divided on the basis of achievement determined by written tests.

Program Principles

As a result of our experience, we have found the following will help insure success if you are planning a program for the development of the sub-professional or technicians at your establishment:

1. Make the program broad in its base to attract the most possible candidates considering the needs of the group as a whole.
2. Offer a terminal program, the com-

pletion of which is in the near foreseeable future.

3. Hold out the possibility of even further training of a professional type.
4. Give the program status by having it conducted by an accredited college with some sort of award for completion.
5. Management should assist the employee financially to the greatest degree possible within the limits of the policy of the organization.

Tulsa ASTD Projector Gift To College



The University of Tulsa College of Business Administration was the recipient of a 16mm sound motion picture projector from the members of the Tulsa Chapter of ASTD. The projector was a gift of gratitude by the local chapter of the Society for the cooperative efforts of the University's College of Business in the development and administration of Management Conferences offered by the Society on an annual basis for first-line and middle management supervisory personnel of area companies. Accepting the projector for the University was Dr. M. M. Hargrove (left), Dean of the College of Business Administration. Mr. Carl M. White (right) of Service Pipe Line Company and President of the Tulsa Chapter, ASTD, made the presentation.